

Appln No. 10/591,516
Amdt date May 12, 2011
Reply to Office action of February 17, 2011

REMARKS/ARGUMENTS

In the February 17, 2011 Office action, the Examiner rejected claims 1-5 under the ground of nonstatutory obviousness-type double patenting over claims 1-8 of Asai et al. (U.S. 6,716,907) (Asai I) in view of Togashi et al. (U.S. 5,064,881). Each of the present independent claims 1-4 recite, in part, a phenol resin molding material comprising 30 to 90 parts by weight of a natural silica powder having an average particle size of 0.5 to 15 μm and subjected to a coupling agent treatment. In rejecting these claims, the Examiner alleges that Asai I is directed to a molded resin composition requiring 30 to 90 parts by weight of natural silica having an average particle diameter of from 20 to 150 μm . Office action, pages 2-3. The Examiner also states that Togashi teaches a resin having silica with an average particle size of up to 8 μm , and that it would have been obvious to use the silica of Togashi in the molded resin composition of Asai I. Office action, page 3. However, neither of Asai I nor Togashi teach or suggest a natural silica powder having an average particle size of 0.5 to 15 μm that has been *subjected to a coupling agent treatment*. The coupling agent treatment is described in the present Specification at page 4, line 11 - page 6, line 6. As stated in the present specification, "by carrying out the coupling agent treatment, it is possible to improve adhesion [of the silica powder] with the phenol resin and to prevent loss of silica powder, due to frictional resistance." Specification, page 5, lines 20-24.

As stated in the present specification, phenol resin molded materials, such as that disclosed in the present specification, may be used in pulley systems. Specification, page 1, lines 20-23. However, when dust gets between a phenol resin molded pulley and a belt, "the [pulley] surface in contact with the belt likely to be abraded," and furthermore, "the resin pulley is inferior in durability as compared with a conventional metal pulley." Specification, page 1, lines 15-28. Others have proposed improving abrasion resistance "by mixing the phenol resin with a natural silica powder having an average particle size of 20 to 150 μm ," however, "because the silica powder has a large particle size to provide excellent abrasion resistance," this results "in a short life of the facilities" manufacturing the phenol resin molded products. Specification, page

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1, line 29 - page 2, line 4. The present claims, including the use of silica that is subjected to a coupling agent treatment having the claimed size and in the claimed weight range, helps to remedy these deficiencies. As stated in the Specification, the phenol resin molded products of the present invention have improved dust resistance, abrasion resistance, and heat cycle resistance, and additionally the lifetime of facilities producing the phenol resin molded materials is not deteriorated. Specification, page 5, lines 20-33.

As Asai I and Togashi, either alone or in combination, fail to teach or suggest a phenol resin molding material comprising 30 to 90 parts by weight of a natural silica powder having an average particle size of 0.5 to 15 μm and subjected to a coupling agent treatment, independent claims 1-4, and dependent claim 5, are allowable over Asai I and Togashi.

The Examiner also rejected claims 1-5 under 35 U.S.C. §103(a) as obvious over Asai et al. (U.S. 2002/0123557) (Asai II) and Togashi. As stated above, each of independent claims 1-4 recite, in part, a phenol resin molding material comprising 30 to 90 parts by weight of a natural silica powder having an average particle size of 0.5 to 15 μm and subjected to a coupling agent treatment. In rejecting these claims, the Examiner alleges that Asai II teach a molded resin composition having 30 to 90 parts by weight of natural silica having an average particle diameter of from 20 to 150 μm . Office action, page 4. The Examiner also states that Togashi teaches a resin having silica with an average particle size of up to 8 μm , and that it would have been obvious to use the silica of Togashi in the molded resin composition of Asai II. Office action, page 5. However, neither of Asai II nor Togashi teach or suggest a natural silica powder having an average particle size of 0.5 to 15 μm that has been *subjected to a coupling agent treatment*. Accordingly, as Asai II and Togashi, either alone or in combination, fail to teach or suggest a phenol resin molding material comprising 30 to 90 parts by weight of a natural silica powder having an average particle size of 0.5 to 15 μm and subjected to a coupling agent treatment, independent claims 1-4, and dependent claim 5, are allowable over Asai II and Togashi.

Claims 1-5 now remain in this application. In light of the above remarks, Applicant submits that all of pending claims 1-5 are in condition for allowance. Applicant therefore respectfully request a timely indication of allowance. However, if there are any remaining issues

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that can be addressed by telephone, Applicant invites the examiner to contact Applicant's counsel at the number indicated below.

Respectfully submitted,
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